Amendments to the Claims

The listing of claims will replace all prior versions, and listings of claims in the application.

1-13 (cancelled)

14. (currently amended) A position determining system ~~in an exposure portion of a lithography tool~~ that measures a position of ~~a~~ an alignment mark ~~pattern~~ on a substrate ~~before a subsequent pattern is exposed~~, ~~the system~~ comprising:

a superluminescent device (SLD) that transmits a light beam;

a lens system that directs the light beam ~~onto~~ to be diffracted from the alignment mark ~~a target alignment area~~, the diffracted light causing ghost or spurious reflections through its interaction with the lens system;

a sensor ~~that receives combined coherent beams of light diffracted by the target alignment area via the lens system, the sensor~~ configured to use the ~~combined coherent beams of~~ diffracted light to determine a position of the alignment mark ~~target alignment area before the subsequent pattern is exposed and~~ to produce a control signal related to the determined position, ~~wherein the control signal is used to substantially reduce unwanted reflections due to optics within the exposure portion;~~ and

a positioning system configured to align the substrate to receive a ~~the~~ subsequent pattern based on the control signal,

wherein the positioning system is configured to use the control signal to substantially reduce the ghost or spurious reflections during receipt of the subsequent pattern by the substrate~~,~~

~~wherein the SLD is configured to produce a coherence length of the light beam that is less than a thickness of a lens in the lens system or less than a distance between lenses within the lens system~~.

15. (previously presented) The system of claim 14, wherein the SLD is configured to produce the coherence length of the light beam that substantially

eliminates interference between at least one of ghost or spurious reflections caused by the lens system and the diffracted light beam.

16. (previously presented) The system of claim 14, wherein the SLD is configured to produce the coherence length of the light beam that is less than a smallest distance between first and second ones of the lenses in the lens system.

17. (previously presented) The system of claim 14, wherein the SLD comprises a laser diode having an anti-reflection coating on at least one surface.

18. (currently amended) The system of claim 14, wherein the sensor is configured to determine the position of the ~~target alignment area~~ alignment mark using interferometry.

19. (previously presented) The system of claim 14, wherein the SLD is configured to produce the coherence length of the light beam that is about 0.5 mm or less.

20. (currently amended) A position measuring method that measures a position of [[a]] an alignment mark ~~current pattern~~ on a substrate ~~before a subsequent pattern is exposed~~, comprising:

generating and transmitting superluminescent light having a coherence length;

directing the superluminescent light ~~onto a target alignment area~~ to be diffracted from the alignment mark using a lens system;

diffracting the superluminescent light from the ~~target alignment area~~ alignment mark to produce +/- first order diffracted beams ~~resulting from the lens system and the substrate alone~~;

directing the +/- first order diffracted beams onto a combining element using the lens system, the diffracted light causing ghost or spurious reflections through its interaction with the lens system;

combining the +/- first order diffracted beams using the combining element;

determining a position of the ~~target alignment area~~ alignment mark based on an interference pattern generated from the combining step;

generating a control signal based on the determined position; and

positioning the substrate to properly align the substrate to receive [[the]] a subsequent pattern based on the control signal,

wherein the control signal generated from positioning the substrate is used to substantially reduce the ghost or spurious reflections during receipt of the subsequent pattern by the substrate

~~wherein the coherence length of the superluminescent light is less than a thickness of a lens in the lens system or less than a distance between lenses within the lens system~~.

21. (previously presented) The method of claim 20, wherein the generating step comprises using a superluminescent device (SLD) to generate the superluminescent light.

22. (previously presented) The method of claim 20, wherein the generating step comprises using a laser diode having at least one anti-reflective surface to generate the superluminescent light.

23. (previously presented) The method of claim 20, wherein the coherence length of the superluminescent light is about 0.5 mm or less.

24. (previously presented) The method of claim 20, wherein the coherence length of the light beam is less than a smallest distance between first and second ones of the lenses in the lens system.

25. (previously presented) The method of claim 20, wherein the coherence length of the light beam is less than a smallest thickness of one of the lenses in the lens system.